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Barriers and Incentives to Labour Force Participation, Australia methodology

Reference period 2018-19 financial year

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Explanatory notes

Introduction

This publication contains results from the Barriers and Incentives to Labour Force Participation Survey, a topic on the Multipurpose Household Survey (MPHS) conducted throughout Australia from July 2018 to June 2019. The MPHS is conducted by the Australian Bureau of Statistics (ABS) as a supplement to the monthly Labour Force Survey (LFS), and is designed to collect statistics for a number of small, self-contained topics.

The publication Labour Force, Australia (https://www.abs.gov.au/statistics/labour /employment-and-unemployment/labour-force-australia/latest-release) (cat. no. 6202.0) contains information about survey design, sample design, scope, coverage and population benchmarks relevant to the monthly LFS, which also apply to the MPHS. It also contains definitions of demographic and labour force characteristics, and information about the modes of data collection, which are relevant to both the monthly LFS and the MPHS.

Concepts sources and methods

The conceptual framework used in Australia's LFS aligns closely with the standards and

guidelines set out in Resolutions of the International Conference of Labour Statisticians. Descriptions of the underlying concepts and structure of Australia's labour force statistics, and the sources and methods used in compiling these estimates, are presented in [Labour Statistics: Concepts, Sources and Methods (https://www.abs.gov.au/ausstats/abs@.nsf /mf/6102.0.55.001)](https://www.abs.gov.au/ausstats/abs@.nsf/mf/6102.0.55.001) (cat. no. 6102.0.55.001).

Collection methodology

ABS interviewers conducted personal interviews by either telephone or in person at selected households during the 2018–19 financial year. Each month a sample of households were selected for the MPHS from the responding households in the LFS. In these households, after the LFS had been fully completed for each person, a usual resident aged 15 years and over was selected at random and asked the additional MPHS questions in a personal interview. Information was collected using Computer Assisted Interviewing (CAI), whereby responses are recorded directly onto an electronic questionnaire in a notebook computer.

Scope and coverage

The scope of the LFS is restricted to persons aged 15 years and over and excludes the following:

- members of the permanent defence forces
- certain diplomatic personnel of overseas governments, customarily excluded from census and estimated population counts
- members of non-Australian defence forces (and their dependants)
- overseas residents in Australia

The following exclusions also apply:

- people living in remote parts of Australia (including Aboriginal and Torres Strait Islander communities)
- people living in non-private households such as hotels, university residences, students at boarding schools, patients in hospitals, inmates of prisons and residents of other institutions (e.g. retirement homes, homes for people with disabilities)

Coverage rules are applied which aim to ensure that each person is associated with only one household and hence has only one chance of selection in the survey. See the Explanatory Notes of [Labour Force, Australia (https://www.abs.gov.au/statistics/labour /employment-and-unemployment/labour-force-australia/latest-release)](https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/latest-release) (cat. no. 6202.0) for more details.

Sample size

The initial sample for the MPHS 2018–19 consisted of approximately 26,000 private dwellings. Of the 20,000 private dwellings that remained in the survey after sample loss (e.g. no residents in scope for the LFS, vacant or derelict dwellings and dwellings under construction) approximately 72% were fully responding to the MPHS. The number of completed interviews obtained from these private dwellings (after taking into account the scope exclusion) was 13,300.

Weighting, benchmarking and estimation

Survey weights are calibrated against population benchmarks to ensure that the survey estimates conform to the independently estimated distribution of the population, rather than the distribution within the sample itself.

When calibrating the weights, the survey sample is grouped into categories based on the following characteristics:

- State or territory
- Capital city or rest of state
- Sex
- Age
- Employed full-time, part-time, unemployed or not in the labour force.

The survey benchmarks were based on a 12 month average of the population estimates for the financial year July 2018 to June 2019, as reported in the December 2019 issue of Labour Force, Australia (https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/dec-2019) (cat. no. 6202.0). This approach is used to remove the seasonality from the employed, unemployed and not in the labour force benchmarks and to improve coherence between the two publications.

Reliability of estimates

Estimates are subject to sampling and non-sampling errors:

- Sampling errors are the difference between the published estimate and the value that would have been produced if all households had been included in the survey. For more information see the Technical Note on Data Quality.
- Non-sampling errors are inaccuracies that occur because of, for example, imperfections in reporting by respondents and interviewers and errors made in coding and processing data. These inaccuracies may occur in any enumeration, whether it be a full count or a sample. Every effort is made to minimise non-sampling error by careful design of questionnaires, intensive training and supervision of interviewers and effective processing procedures.

Classifications used

- Country of birth data are classified according to the [Standard Australian Classification of Countries (SACC), 2011 (https://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/F63BD8670E4CF23CCA257FDC0011DB93?opendocument)](https://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/F63BD8670E4CF23CCA257FDC0011DB93?opendocument) (cat. no. 1269.0)
- Occupation data are classified according to the [ANZSCO – Australian and New Zealand Standard Classification of Occupations, 2013, Version 1.2 (https://www.abs.gov.au/AUSSTATS/abs@.nsf/productsbyCatalogue/4AF138F6DB4FFD4BCA2571E200096BAD?OpenDocument)](https://www.abs.gov.au/AUSSTATS/abs@.nsf/productsbyCatalogue/4AF138F6DB4FFD4BCA2571E200096BAD?OpenDocument) (cat. no. 1220.0)
- Industry data are classified according to the [Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (Revision 2.0) (https://www.abs.gov.au/AUSSTATS/abs@.nsf/productsbyCatalogue/D249EC2A7DC203BACA257B9500133E91?OpenDocument)](https://www.abs.gov.au/AUSSTATS/abs@.nsf/productsbyCatalogue/D249EC2A7DC203BACA257B9500133E91?OpenDocument) (cat. no. 1292.0)
- Education data are classified according to the [Australian Standard Classification of Education (ASCED), 2001 (https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1272.0Main+Features12001?OpenDocument)](https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1272.0Main+Features12001?OpenDocument) (cat. no. 1272.0)

Comparability with monthly LFS estimates

Due to differences in the scope and sample size of the MPHS and that of LFS, the estimation procedure may lead to some variations between labour force estimates from this survey and those from LFS.

Previous surveys

The Barriers to Labour Force Participation survey was last conducted in the 2016–17 financial year. Results of this survey were published in:

- [Barriers to Labour Force Participation, Australia, July 2016 to June 2017 (https://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/2F6BA51C9269A8F5CA2585D10012062B?opendocument)](https://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/2F6BA51C9269A8F5CA2585D10012062B?opendocument) (cat. no. 6239.0).

History of changes

2018-19

- Estimates were benchmarked to a 12 month average of population estimates from the Labour Force Survey (as at December 2019). Estimates from previous surveys were also re-benchmarked using 12 month averages from the same LFS population series (as at December 2019) to improve coherence and consistency in the timeseries.

2016-17

- Enhancements were made to the Previous job module, a new question asking "Did you have employees in the business" was added.

2014-15

- Questions on Previous full-time job details and Main source of current personal income were excluded from the 2014–15 survey
- Enhancements were made to the Previous job payment arrangements question, adding the response category of 'Unpaid trainee/work placement'. Enhancements were also made to survey questions on why not looking for work or more hours, trouble finding work or more hours and wanting more hours. The response categories of 'No need/satisfied with current arrangements/retired (for now)' and 'Visa requirements' were added to these questions.

2012-13

- Part-time workers in scope for the survey were increased to include all part-time workers who usually worked less than 35 hours. In prior surveys, part-time workers is scope for the survey were restricted to only those who usually worked 15 hours or less.

Acknowledgment

Related publications

ABS publications which may also be of interest include:

- Labour Force, Australia (https://www.abs.gov.au/ausstats/abs@.nsf/mf/6202.0) (cat. no. 6202.0)
- Labour Statistics: Concepts, Sources and Methods (https://www.abs.gov.au/ausstats/abs@.nsf/mf/6102.0.55.001) (cat. no. 6102.0.55.001)
- Participation, Job Search and Mobility, Australia (https://www.abs.gov.au/ausstats/abs@.nsf/mf/6226.0) (cat. no. 6226.0)
- Microdata: Longitudinal Labour Force, Australia (https://www.abs.gov.au/ausstats/abs@.nsf/mf/6602.0) (cat. no. 6602.0)

Technical note - data quality

Introduction

Since the estimates published in this publication are based on information obtained from occupants of a sample of households, they are subject to sampling variability. That is, they may differ from those estimates that would have been produced if all households had been included in the survey. One measure of the likely difference is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of households (or occupants) was included.

There are about two chances in three (67%) that a sample estimate will differ by less than one SE from the number that would have been obtained if all households had been included, and about 19 chances in 20 (95%) that the difference will be less than two SEs.

Another measure of the likely difference is the relative standard error (RSE), which is obtained by expressing the SE as a percentage of the estimate.

RSE% = (SE/estimate) x 100

RSEs for Barriers and Incentives to Labour Force Participation estimates have been calculated using the Jackknife method of variance estimation. This process involves the calculation of 30 'replicate' estimates based on 30 different subsamples of the original sample. The variability of estimates obtained from these subsamples is used to estimate the sample variability surrounding the main estimate.

The Excel spreadsheets in the Data downloads section contain all the tables produced for this release and the calculated RSEs for each of the estimates. The RSEs for estimates other than medians have been calculated using the Jackknife method, and RSEs for the medians have been calculated using the Woodruff method.

In the tables in this publication, only estimates (numbers, percentages, means and medians) with RSEs less than 25% are considered sufficiently reliable for most purposes. However, estimates with larger RSEs have been included. Estimates with an RSE in the range 25% to 50% should be used with caution while estimates with RSEs greater than 50% are considered too unreliable for general use. All cells in the Excel spreadsheets with RSEs greater than 25% contain a comment indicating the size of the RSE. These cells can be identified by a red indicator in the corner of the cell. The comment appears when the mouse pointer hovers over the cell.

Calculation of standard error and relative standard error

RSEs are routinely presented as the measure of sampling error in this publication and

related products. SEs can be calculated using the estimates (counts or means) and the corresponding RSEs.

An example of the calculation of the SE from an RSE follows. An estimate of males who were unemployed was 309,800, and the RSE for this estimate was 6.7%. The SE is:
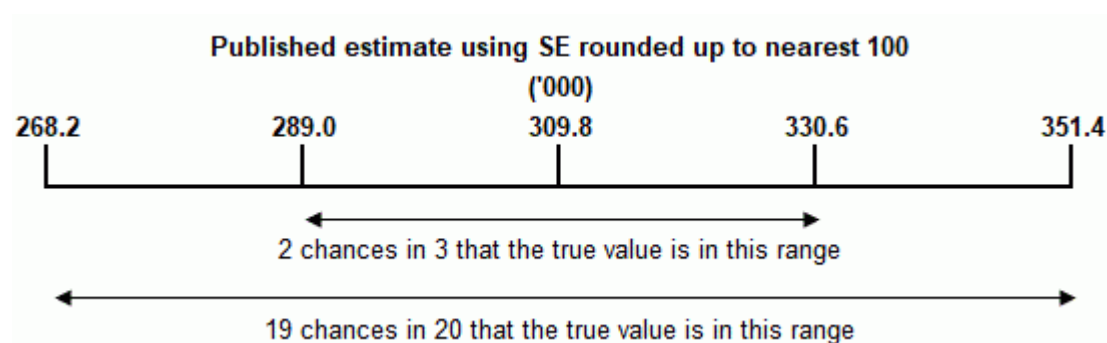
SE of estimate

= (RSE / 100) x estimate

= 0.067 x 309,800

= 20,800 (rounded to the nearest 100)

Therefore, there are about two chances in three that the value that would have been produced if all dwellings had been included in the survey would fall within the range 289,000 to 330,600 and about 19 chances in 20 that the value would fall within the range 268,200 to 351,400. This example is illustrated in the following diagram.

Published estimate using SE rounded up to nearest 100 ('000)

| 268.2 | 289.0 | 309.8 | 330.6 | 351.4 |

2 chances in 3 that the true value is in this range

19 chances in 20 that the true value is in this range

Proportions and percentages

Proportions and percentages formed from the ratio of two estimates are also subject to sampling errors. The size of the error depends on the accuracy of both the numerator and the denominator. A formula to approximate the RSEs of proportions not provided in the spreadsheets is given below. This formula is only valid when x is a subset of y.

$$RSE\left(\frac{x}{y}\right) = \sqrt{[RSE(x)]^2 - [RSE(y)]^2}$$

Considering an estimate of 965,300 people who were not in the labour force and wanted a paid job, 328,700 or 34.0% were aged 55 years and over. The RSE for 328,700 is 6.3% and the RSE for 965,300 is 4.6%. Applying the above formula, the RSE for the proportion of

people aged 55 years and over who were not in the labour force and wanted a paid job is:

$$RSE = \sqrt{(6.3)^2 - (4.6)^2} = 4.3\%$$

Therefore, the SE for the proportion of people aged 55 years and over who were not in the labour force and wanted a paid job was 1.5 percentage points (= (4.3/100) x .34). Therefore, there are about two chances in three that the proportion of people aged 55 years and over who were not in the labour force and wanted a paid job is between 32.5% and 35.5%, and 19 chances in 20 that the proportion was within the range 31.0% to 37.0%.

Sums or differences between estimates

Published estimates may also be used to calculate the sum of two or more estimates, or the difference between two survey estimates (of numbers, means or percentages) where these are not provided in the spreadsheets. Such estimates are also subject to sampling error.

The sampling error of the difference between two estimates depends on their SEs and the relationship (correlation) between them. An approximate SE of the difference between two estimates (x–y) may be calculated by the following formula:

$$SE(x - y) = \sqrt{[SE(x)]^2 + [SE(y)]^2}$$

The sampling error of the sum of two estimates is calculated in a similar way. An approximate SE of the sum of two estimates (x+y) may be calculated by the following formula:

$$SE(x + y) = \sqrt{[SE(x)]^2 + [SE(y)]^2}$$

Considering the example above, the estimated number of people who were not in the labour force, wanted a paid job and were aged 55 years and over was 328,700, and the SE for this estimate was 20,700 (rounded to the nearest 100). The estimate of people aged 45-54 years who were not in the labour force and wanted a paid job was 120,500 and the SE was 12,400. The estimate of the combined aged group i.e. people aged 45 years and over who were not in the labour force and wanted a paid job is:

$$328,700 + 120,500 = 449,200$$

The SE of the estimate of people aged 45 years and over who wanted a paid job is:

$$SE = \sqrt{(20,700)^2 + (12,400)^2} = 24,100$$

Therefore, there are about two chances in three that the value that would have been

produced if all dwellings had been included in the survey would fall within the range 425,100 to 473,300 and about 19 chances in 20 that the value would fall within the range 401,000 to 497,400.

While these formulae will only be exact for sums of, or differences between, separate and uncorrelated characteristics or subpopulations, it is expected to provide a good approximation for all sums or differences likely to be of interest in this publication.

Significance testing

A statistical test for any comparisons between estimates can be performed to determine whether it is likely that there is a significant difference between two corresponding population characteristics. The standard error of the difference between two corresponding estimates (x and y) can be calculated using the formula detailed above. This standard error is then used to calculate the following test statistic:

$$\left(\frac{x-y}{SE(x-y)} \right)$$

If the value of this test statistic is greater than 1.96 then there is evidence, with a 95% level of confidence, of a statistically significant difference in the two populations with respect to that characteristic. Otherwise, it cannot be stated with confidence that there is a difference between the populations with respect to that characteristic.

The imprecision due to sampling variability, which is measured by the SE, should not be confused with inaccuracies that may occur because of imperfections in reporting by respondents and recording by interviewers, and errors made in coding and processing data. Inaccuracies of this kind are referred to as non-sampling error, and they occur in any enumeration, whether it be a full count or sample. Every effort is made to reduce non-sampling error to a minimum by careful design of questionnaires, intensive training and supervision of interviewers, and efficient operating procedures.

Glossary

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Actively looking for work

Actively looking for work includes:

- written, telephoned or applied to an employer for work
- had an interview with an employer for work

- answered an advertisement for a job
- checked or registered with an employment agency
- taken steps to purchase or start your own business
- advertised or tendered for work, and
- contacted friends or relatives in order to obtain work.

Available to start work

Refers to people who were available to start work or more hours either in the reference week, or in the four weeks subsequent to the interview.

Available to start work with more hours

Employed people who usually worked 0–34 hours per week in all jobs and were available to start work with more hours in the reference week or in the four weeks subsequent to the interview.

Currently studying

People who were undertaking study for a trade certificate, diploma, degree or any other educational qualification at the time of the survey.

Did not prefer to work more hours

People who said 'no' or 'don't know' when asked 'would you prefer to work more hours than you usually work?'.

Did not want a paid job

People who were not classified as employed or unemployed who answered 'no' or 'don't know' when asked if they would like a paid job.

Duration of current main job/last job

Length of time worked in current main job or last job if not employed.

Employed

People who, during the reference week:

- worked for one hour or more for pay, profit, commission or payment in kind in a job or business, or on a farm (comprising employees and owner managers of incorporated or unincorporated enterprises), or
- worked for one hour or more without pay in a family business or on a farm (i.e. contributing family workers), or
- were employees who had a job but were not at work and were:
  - away from work for less than four weeks up to the end of the reference week, or

- away from work for more than four weeks up to the end of the reference week and received pay for some or all of the four week period to the end of the reference week, or
- away from work as a standard work or shift arrangement, or
- on strike or locked out, or
- on workers' compensation and expected to return to their job, or

- were owner managers who had a job, business or farm, but were not at work.

Employees

People who work for a public or private employer and receive remuneration in wages, salary, commission, tips, piece rates, or payment in kind.

People who operate their own incorporated enterprises can also be classified as employees, but are categorised in a separate category, see Owner managers of incorporated enterprises (OMIEs) and Status in employment.

Employees with paid leave entitlements

Employees who were entitled to either paid sick leave or paid holiday leave (or both).

Employees without paid leave entitlements

Employees who were not entitled to, or did not know whether they were entitled to, paid sick and paid holiday leave.

Family

Two or more people, one of whom is at least 15 years of age, who are related by blood, marriage (registered or de facto), adoption, step or fostering; and who are usually resident in the same household. The basis of a family is formed by identifying the presence of a couple relationship, lone parent-child relationship or other blood relationship. Some households will, therefore, contain more than one family.

Full-time workers (usual)

Employed people who usually work 35 hours or more a week in all jobs.

Future starters

People who were not employed during the reference week, were waiting to start a job within four weeks from the end of the reference week, and could have started in the reference week if the job had been available then.

Had previously worked

People who are not in the labour force or are unemployed and have previously worked in the last 20 years

Industry

An industry relates to a group of businesses or organisations that perform similar sets of activities in terms of the production of goods and services. In this publication, industry is classified according to the [Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 Revision 2.0 (https://www.abs.gov.au/AUSSTATS/abs@.nsf /productsbyCatalogue/D249EC2A7DC203BACA257B9500133E91?OpenDocument)](https://www.abs.gov.au/AUSSTATS/abs@.nsf/productsbyCatalogue/D249EC2A7DC203BACA257B9500133E91?OpenDocument) (cat. no. 1292.0).

Labour force

The civilian population can be split into two mutually exclusive groups: the labour force (employed and unemployed people) and not in the labour force.

Last job

Refers to the last job worked within the last 20 years.

Level of highest non-school qualification

A person's level of highest non-school qualification is the highest qualification a person has attained in any area of formal study other than school study. It is categorised according to the [Australian Standard Classification of Education (ASCED), 2001 (https://www.abs.gov.au /ausstats/abs@.nsf/mf/1272.0)](https://www.abs.gov.au/ausstats/abs@.nsf/mf/1272.0) (cat. no. 1272.0) Level of education classification.

Looking for work with more hours

Looked for work with more hours at some time during the four weeks up to the end of the reference week.

Main job

The job in which most hours were usually worked.

Not employed

People who are either unemployed or not in the labour force.

Occupation

An occupation relates to a collection of jobs that are sufficiently similar in their title and tasks, skill level and skill specialisation which are grouped together for the purposes of classification. In this publication, occupation is classified according to [ANZSCO - Australian and New Zealand Standard Classification of Occupations, 2013, Version 1.2](#)

(https://www.abs.gov.au/AUSSTATS/abs@.nsf/productsbyCatalogue/4AF138F6DB4FFD4BCA2571E200096BAD?OpenDocument) (cat. no. 1220.0).

Owner managers of incorporated enterprises (OMIEs)

People who work in their own incorporated enterprise, that is, a business entity which is registered as a separate legal entity to its members or owners (may also be known as a limited liability company).

An owner manager of an incorporated enterprise may or may not hire one or more employees in addition to themselves and/or other owners of that business. See Status in employment for more information.

Owner managers of unincorporated enterprises (OMUEs)

People who operate their own unincorporated enterprise or engage independently in a profession or trade.

An owner manager of an unincorporated enterprise may or may not hire one or more employees in addition to themselves and/or other owners of that business. See Status in employment for more information.

Part-time workers (usual)

Employed people who usually worked less than 35 hours a week (in all jobs). This includes people who don't usually work (i.e. usually work 0 hours per week), but during the reference week they were employed between 1-34 hours.

People in the labour force

People who were classified as employed or unemployed.

People not in the labour force

People who were not classified as either employed or unemployed.

Preferred to work more hours

Employed people who usually work less than 35 hours a week and would prefer to work more hours than they usually work.

Reference week

The week preceding the week in which the interview was conducted.

Relationship in household

The relationship of people who live in the same household.

Status in employment

Status in employment is determined by an employed person's position in relation to their job, and is usually in respect to a person's main job if they hold more than one job.

Employed people are classified according to the reported relationship between the person and the enterprise for which they work, together with the legal status of the enterprise where this can be established. The groups include:

- Employees with leave entitlements
- Employees without leave entitlements
- Owner manager of incorporated enterprise (OMIEs) with employees
- Owner manager of incorporated enterprise (OMIEs) without employees
- Owner manager of unincorporated enterprise (OMUEs) with employees
- Owner manager of unincorporated enterprise (OMUEs) without employees, and
- Contributing family workers.

Time since last job

The elapsed time since ceasing last job.

Unemployed

People who were not employed during the reference week, and:

- had actively looked for full-time or part-time work at any time in the four weeks up to the end of the reference week, and
- were available for work in the reference week, or
- were waiting to start a new job within four weeks from the end of the reference week and could have started in the reference week if the job had been available then.

Unpaid activities

Includes caring for own children or other people's children, including grandchildren. Also includes caring for the elderly or someone with a long-term illness or disability, or undertaking unpaid voluntary work. Respondents were asked whether they had undertaken any of these activities in the last four weeks.

Usual hours worked

Usual hours of work refers to a typical period rather than the hours worked in a specified reference period. The concept of usual hours applies both to people at work and to people temporarily absent from work, and is defined as the hours worked during a typical week or day. Actual hours worked (for a specific reference period) may differ from usual hours worked due to illness, vacation, strike, overtime work, a change of job, or similar reasons. It

is possible for a person to usually not work any hours in a typical week (usually work 0 hours) but be classified as employed based on the hours worked during the specific reference period.

Wanted a paid job

People who are not in the labour force and would like a paid job of any kind. Includes people who answered 'Maybe/it depends'.

Wanted more hours

See 'Preferred to work more hours'.